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10/705,938	11/13/2003	Yoshiki Ishii	03560.003397	6571

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EXAMINER
WERNER, DAVID N

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _13 July 2007_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,4-7,10-17 and 26-30_ is/are pending in the application.

    4a) Of the above claim(s) _10-14_ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,4-7,15-17 and 26-30_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _13 November 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   This Office Action for US Patent Application 10/705,938 is in response to communications filed 13 July 2007, in reply to the Office Action of 13 April 2007. Currently, claims 1, 4-7, 10-17, and 26-30 are pending. Claims 2, 3, 8, 9, and 18-25 have been cancelled, and claims 10-14 have been withdrawn from consideration as directed to non-elected species. Claims 26-30 are new.

In the previous Office action, claims 1-9 and 15-25 were rejected under 35 U.S.C. 112, first paragraph, for failing to comply with the enablement requirement, claims 1-9 and 15-25 were rejected under 35 U.S.C. 101 as non-statutory, claims 1-3, 7, 15, and 17 were rejected under 35 U.S.C. 103(a) as obvious over DE 10,035,109 A1 (Cho et al.), claims 4-6 and 16 were rejected under 35 U.S.C. 103(a) as obvious over Cho et al. in view of JP 2000-050263 A (Asada et al.), claims 8, 9, 18-21, and 25 were rejected under 35 U.S.C. 103(a) as obvious over Cho et al. in view of US Patent 5,712,947 A (Oguro et al.), and claims 22-24 were rejected under 35 U.S.C. 103(a) as obvious over Cho et al. in view of Oguro et al. and Asada et al. In addition, the specification was objected to on formalities.

Election/Restrictions

2.   Applicant's election of species III (claims 15-17) in the reply filed on 13 July 2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an

election without traverse (MPEP § 818.03(a)), regardless of the previous indications to elect with traverse.

Response to Amendment

3.   Although the reply filed on 13 July 2007 fails to include a complete or accurate record of the substance of the 04 April 2007 interview, the reply is considered fully responsive, as the above interview only discussed procedural matters.   See MPEP 713.04.

4.   Applicant's amendments to the abstract and disclosure have been fully considered.   The objections to the abstract and disclosure on formalities have been withdrawn.

5.   Applicant's amendments to the claims have been fully considered.   Since the claims no longer contain means-plus-function language and are fully directed towards an apparatus, the claims are no longer considered to be directed to a software implementation of the present invention.   Accordingly, the rejections of the claims under 35 U.S.C. 112, first paragraph as failing to comply with the enablement requirement and 35 U.S.C. 101 as directed towards non-statutory subject matter are withdrawn.

Response to Arguments

6.   Applicant's arguments filed 13 July 2007 with respect to the rejection of claims 1, 15, and 28 under 35 U.S.C. 103(a) in view of Cho et al. have been fully considered but they are not persuasive. Applicant contends that Cho et al. does not disclose the

claimed feature of generating "encoded still image data that includes intra-frame coded data and inter-frame coded data, which is an encoded coding error of the intra-frame coded data". However, Cho et al. may operate on H.263 moving picture data (column 13: line 42), which incorporates encoding images in the manner described above.

H.263 is a video codec produced by the International Telecommunication Union, designed for video transmission at a low bit rate. In H.263, in an INTER mode, a picture is coded as a prediction from a reference picture (§ 4.2.2). B-frames and BP-frames are coded in an INTER mode for a whole picture, and P-frames may be coded in an INTER mode either for a whole picture or on a macroblock basis (§4.2.2). An INTER block is decoded by summing the prediction and the inverse transformation of the corresponding block of the reference frame (§6.3.1). As defined in the prior ITU-T H.261 standard, the prediction for a block in an INTER mode is a "prediction error", or difference, from the reference (§ 3.2).

Therefore, since Cho et al. may store still pictures having an H.263 syntax (column 13: lines 41-42), and H.263 pictures were known to be encoded as inter-frame coded data that is a prediction, or error, from intra-frame coded data, it is inherent that the video encoder of Cho et al. performs the processing described above. Therefore, the examiner respectfully maintains all prior art rejections based on Cho et al.

In addition, in one embodiment of prior art Asada et al., as shown in figure 1, subtractor 2 takes the difference between the prediction data of a previous frame and the data of a present frame (paragraph 0017).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1, 4-7, 15-17, and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application 2000-050263 A (Asada et al.) in view of German Technical Disclosure 10,035,109 A1 (Cho et al.), relying on US Patent 6,956,971 B1 for translation.

Asada et al. teaches a digital camera that can encode or decode both motion images and still images (abstract). Regarding claim 1, as shown in figure 12, images are picked up through lens 60 to CCD 61 and amplifier 62, where they are changed to digital format by A/D converter 63, processed by processing circuit 64, and stored in buffer memory 65 (paragraph 0063). The picture signal stored in buffer memory 65 is encoded with coder/decoder 66, and stored in memory 67 (paragraph 0063). Then, buffer memory 65, storing input images prior to coding, corresponds with the claimed "memory unit". In one embodiment of Asada et al., shown in figure 1, quantizer 5 quantizes DCT coefficients of an inputted image (paragraph 0021). This corresponds with the claimed "quantization unit".

In the present invention, still image coding and motion image coding are carried out on the same format, but in Asada et al., while the motion image coder and still image coder share common circuitry, they encode using different formats (abstract). In

addition, while Asada et al. shows that the quantizing tables used in motion image coding and still image coding are different (paragraphs 0040-0044), Asada et al. does not address relative quality of still images and motion images based on quantizer levels.

Cho et al. teaches a system that transmits a moving picture and still pictures extracted from the moving picture in a higher quality than the frames in the moving picture. Regarding claim 1, in one embodiment of Cho et al., as shown in figure 4, a user may choose to set the quality of a still picture according to a desired transmission time (column 7: lines 54-60). The quantizer value for a still picture is lower than the quantizer value for a moving picture (column 7, lines 32-34). Then, core part 300 of Cho et al., which takes as input the user selected image quality parameter and performs quantizing based on this parameter (column 6: lines 27-37), corresponds with the claimed "control unit".

Since core part 300 of Cho et al. encodes a still picture in a moving image format, for example as a high quality intra-picture (column 7: lines 34-41), this also corresponds with the claimed "encoding unit". Note that while Asada et al. directly encodes still images as JPEG, Cho encodes still images in a motion format prior to a further conversion to JPEG (column 13: lines 43-46). As stated previously, if Cho et al. is configured to transmit an inter picture in the H.263 format as the still picture, this picture includes intra-frame coded data and inter-frame coded data as a prediction error.

Regarding claims 15 and 28, "when the moving picture is encoded, the quantizing value may vary with the channel buffer 303 state, however, in case of

encoding the still picture, the user maintains a fixed quantizing value lower than the

case of the moving picture encoding" (column 7: lines 30-35).

Asada et al. discloses the claimed invention except for specifying the reduction of

a quantization parameter for still image encoding. Cho et al. teaches that it was known

to decrease quantization size in a still image mode. Therefore, it would have been

obvious to one having ordinary skill in the art at the time the invention was made to

modify the still image and motion image coder of Asada et al. to encode still images as

motion images with a small quantization step size, as taught by Cho et al., since Cho et

al. states in column 6: lines 50-59 that such a modification would increase image

quality.

Regarding claim 4, figure 7 of Asada et al. shows a quantizer shared by a

motion-image encoder and a still-image encoder. The quantization Q for each DCT

value in a block is given by the formula $Q = \dfrac{16 \times D_{(i,j)}}{Qs \times W_{(i,j)}}$, where D is the DCT coefficient

for frequency (i,j), Qs is the quantization characteristic, and W is the value in a

quantization matrix for frequency (i,j) [0041].

Regarding claim 5, Qs controls the number of "generating signs", or non-zero

quantization values. The examiner takes Official Notice that it is well known in the art

that adjusting a quantization step size changes the quality of a compressed image.

Since Qs is in the denominator of the value of the formula for quantized value Q, a

smaller value of Qs yields a higher value of Q, particularly in higher-frequency AC DCT

values, and increasing the quality of the compressed image. Note that the phrase "dosage child-ized table" throughout the provided machine translation of Asada et al. such as in paragraph [0048] is a mistranslation of the phrase "quantization table", and has no meaning regarding quantization step size.

Regarding claim 6, in Asada et al., motion image processing and still image processing use different quantization tables. Figure 10 shows an embodiment of Asada et al. in which two quantization tables are stored in a memory [0045]. In motion processing, field A stores an Intra quantization table, and field B stores an Inter quantization table [0046]. In still image processing, field A stores a Luminance quantization table, and field B stores a Chrominance quantization table [0048].

Regarding claims 7, 17, and 29, in H.263, motion compensation is optional (§4.2.2): "The prediction is inter-picture and **may** be augmented by motion compensation" (emphasis added). In Cho et al., core part 300 is similar to core part 210 in the "background art" apparatus shown in figure 2. This core part includes a motion estimator 206 and motion compensator 205, which create inter frames (column 1, line 66).

Regarding claim 16, in Asada et al., the quantization tables for still-image coding and motion-image coding are stored in a memory (paragraph 0046).

Regarding claims 26, 27, and 30, the examiner takes Official Notice that it would have been obvious to one having ordinary skill in the art at the time the invention was made to record encoded still images or motion images on a recording medium, to enable further viewing or editing at a later time than recording.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 5,732,155 A (Saito) teaches a device for encoding picture data with a still picture mode and a motion picture mode. US Patent 5,987,179 A (Riek et al.) teaches a system for encoding high-fidelity still images in a motion image stream. US Patent 6,023,520 A (Nagasaka et al.) teaches a system for selecting a key frame from a moving image. US Patent 6,349,154 B1 (Kleihorst) teaches a system for creating a high-resolution still image from a sequence of moving images.

10.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David N. Werner whose telephone number is (571) 272-9662. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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